

Abstract of the Disclosure

An apparatus and method of manufacturing an apparatus for circulating a cooling material within a heat exchanger is disclosed. The apparatus comprises a manifold layer and an interface layer. The interface layer comprises one or more narrowing trenches. The manifold layer  
5 comprises a plurality of apertures, each positioned on either side of a narrowing trench. In operation, a cooling material is transmitted to an apertures, through a channel defined by the narrowing trench and a bottom surface of the manifold layer, and out an aperture, thereby cooling a heat-generating source coupled to a bottom surface of the interface layer. The method  
10 comprises forming a narrowing trench in an interface layer, which exhibits anisotropic etching, by etching the interface layer to form a trench having sloping sidewalls. The method further comprises coupling the interface layer to a manifold layer.